

CLAIMS

What is claimed is:

1. A method of detecting and forecasting resource bottlenecks of a computer system comprising:

monitoring with successive measurements a utilization parameter of a system resource;

computing a change parameter by comparing the differences between successive measurements of the utilization parameter;

comparing the change parameter to a threshold change parameter; and

reporting a resource bottleneck if the change parameter exceeds the threshold change parameter.

2. The method of claim 1 further comprising detecting false bottleneck alarms and modifying the threshold change parameter based on the false bottleneck alarms to decrease a sensitivity of the method.

3. The method of claim 1 further comprising detecting bottlenecks that are not reported resource bottlenecks and modifying the threshold change parameter based on detecting bottlenecks that are not reported resource bottlenecks to increase a sensitivity of the method.

4. The method of claim 1 wherein reporting the resource bottleneck if the change parameter exceeds the threshold

change parameter further comprises delaying reporting the resource bottleneck until the change parameter exceeds the threshold change parameter on at least one successive measurements.

5. The method of claim 1 wherein the utilization parameter includes an average utilization of the system resource for a time period and wherein computing a change parameter by comparing the differences between successive measurements of the utilization parameter comprises subtracting successive measurements of the utilization parameter, and wherein the utilization parameter is distributed in sequentially consecutive utilization classes of increasing utilization, the average utilization for each time period being established for each utilization class, and wherein computing the change parameter comprises comparing the difference between average utilization for consecutive classes at least at two different time periods.

6. The method of claim 1 wherein the utilization parameter includes a standard deviation of the utilization of the system resource for a time period and wherein computing a change parameter by comparing the differences between successive measurements of the utilization parameter comprises determining if the utilization of the system is increasing and the standard deviation of the utilization of the system resource is decreasing based on the successive measurements.

7. The method of claim 1 wherein the utilization parameter is the median load of the utilization of the system resource for a time period and wherein computing a change parameter by comparing the differences between

successive measurements of the utilization parameter comprises determining if the median load is less than the utilization of the system and then greater than the utilization of the system on a successive measurement.

8. A computer program product comprising:

a computer useable medium having computer readable code means embodied thereon for causing a computer to execute a method for detecting and forecasting resource bottlenecks of a computer system, the computer readable code means in the computer program product including:

computer readable program code means for causing a computer to monitor with successive measurements a utilization parameter of a system resource;

computer readable program code means for causing a computer to compute a change parameter by comparing the differences between successive measurements of the utilization parameter;

computer readable program code means for causing a computer to compare the change parameter to a threshold change parameter; and

computer readable program code means for causing a computer to report a resource bottleneck if the change parameter exceeds the threshold change parameter.

9. The computer program product of claim 8 further comprising computer readable program code means for causing a computer to detect false bottleneck alarms and

to modify the threshold change parameter based on the false bottleneck alarms to decrease a sensitivity.

10. The computer program product of claim 8 further comprising computer readable program code means for causing a computer to detect bottlenecks that are not reported resource bottlenecks and to modify the threshold change parameter based on detected bottlenecks that are not reported resource bottlenecks to increase a sensitivity.

11. The computer program product of claim 8 wherein the resource bottleneck is not reported until the change parameter exceeds the threshold change parameter on at least one successive measurement.

12. The computer program product of claim 8 wherein the utilization parameter is the average utilization of the system resource for a time period.

13. The computer program product of claim 8 wherein the utilization parameter is the standard deviation of the utilization of the system resource for a time period.

14. The computer program product of claim 8 wherein the utilization parameter is the median load of the utilization of the system resource for a time period.

15. A data processing system comprising:

a processor; and

a program code executed on the processor for detecting and forecasting resource bottlenecks, the program code including code for:

monitoring with successive measurements a utilization parameter of a system resource;

computing a change parameter by comparing the differences between successive measurements of the utilization parameter;

comparing the change parameter to a threshold change parameter; and

predicting a resource bottleneck if the change parameter exceeds the threshold change parameter.

16. The data processing system of claim 15 wherein the program code further includes code for determining a corrective action to avoid the resource bottleneck.

17. The data processing system of claim 16 wherein the data processing system is a server within a LAN network and the utilization parameter is a percentage of CPU utilization.

18. The data processing system of claim 15 wherein the program code further includes code for detecting false bottleneck alarms and modifying the threshold change parameter based on the false bottleneck alarms to decrease a sensitivity.

19. The data processing system of claim 15 wherein the program code further includes code for detecting bottlenecks that are not reported resource bottlenecks

and modifying the threshold change parameter based on detecting bottlenecks that are not reported resource bottlenecks to increase a sensitivity of the method.

20. The data processing system of claim 15 wherein the program code further includes code for reporting the resource bottleneck if the change parameter exceeds the threshold change parameter on at least one successive measurement.